Ann Ig 2018; 30 (Suppl. 2): 7-14 doi:10.7416/ai.2018.2246

Hospital hygiene in Italy: the GISIO-SItI survey

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Key words: Hospital hygiene, survey, questionnaire
Parole chiave: Igiene ospedaliera, indagine, questionario

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Abstract

Background. *In Italy there are no rules concerning the establishment of a hospital hygiene structure in hospitals and other healthcare settings, and the hospital organization plans vary widely. The aim of the survey, carried out by the Italian Study Group of Hospital Hygiene of the Italian Society of Hygiene, Preventive medicine and Public health, was to evaluate the presence in the hospital organization plan of a structure referred to as Hospital hygiene, or including in its denomination the words "hygiene" or "hospital hygiene", the activities carried out, the relation to other areas, like patient safety, the type and quantity of professionals involved, the strengths and the critical aspects.*

Methods. *A semi-structured questionnaire was administered to Healthcare Trusts representing all Italian Regions through the members of the above Study Group.*

Results. *35 Trusts, 13 in Northern, 8 in Central, 14 in Southern Italy (including Sicily and Sardinia), completed the questionnaire. In 19 Trusts (54.3%) a structure whose denomination included the words "hospital hygiene" or "hygiene" was present. The activities related to the management of infectious risk were most represented, carried out autonomously or in collaboration, but many other activities were covered. In all hospitals the activities of the Hospital Hygiene Unit inter-linked with those of the clinical risk, with different forms of collaboration.*

Conclusions. *This survey, even though on a limited sample, provided a picture of hospital hygiene at a national level, showing a considerable heterogeneity and highlighting critical issues but also strengths. It is essential to share organizational and management models that enhance and promote hospital hygiene, to ensure the appropriateness of healthcare practices offered in a safe and comfortable environment to patients, operators, and visitors.*

Introduction

Hospital hygiene is the discipline which deals with everything related to the physical and psychological wellbeing of patients, visitors and healthcare workers (HCWs) in hospital and other healthcare settings; from a managerial standpoint, these are the functions aimed at ensuring, efficiently, that the structure and organization of the hospital are adequate to carry out appropriate care activities, as well as making a safe and comfortable environment for patients, HCWs and visitors (1-6).

The importance of a hospital hygiene service in health facilities was strongly supported by Prof. Mario Pitzurra, promoter of the Italian Study Group of Hospital Hygiene of the Italian Society of Hygiene, Preventive medicine and Public health (GISIO-SItI). In an article published in 1995 (7), he complained that the Hospital Medical Director is fully responsible for the hospital hygiene activities, a task that actually he cannot perform completely, considering all the other duties that are imposed to him by the legislation in force. Prof. Pitzurra proposed, therefore, the establishment of a dedicated Hospital Hygiene Service (HHS), with full responsibility, led by a medical doctor specialized in Hygiene and Public Health, with a high-level position. To this HHS, adequate spaces, personnel and equipment must be offered. From the point of view of the hospital organization, the HHS should be strictly associated with the Hospital Direction, by having the Hospital Medical Director as the fundamental reference, but - for the fullfilment of its duties – it should be granted a complete autonomy. Prof. Pitzurra identified a series of activities of strict competence of hospital hygiene (Table 1), underlining that the list was not complete, considering the vast number of the tasks connected to hygiene.

On the occasion of the celebrations

of the 25th anniversary of GISIO, on the basis of what Prof. Pitzurra had expressed, we wanted to assess the state of the art of hospital hygiene in Italy and to verify whether what Prof. Pitzurra had proposed, that is, the institution of a HHS within the hospital facilities, had been realized, and whether the activities he had identified as a responsibility of the HHS were being carried out by this structure, or otherwise, to identify the organism to which they were attributed.

Methods

The survey was carried out in September 2016. A questionnaire was sent by e-mail to the GISIO members, who proceeded to submit it to the Health Directions of the different Trusts, as privileged witnesses. In order to include a representation of all the Italian regions in the survey, in the period April-May 2018, questionnaires from the four regions that had not been previously represented (Abruzzo, Calabria, Piemonte, Trentino - Alto Adige) were collected.

The questionnaire consisted of five main parts, the first part dealt with the general information of the Hospital/ Trust; the second part included questions related to the presence, in the hospital organizational plan, of a structure referred to as "Hospital hygiene", or including in its denomination the words "Hygiene" or "Hospital Hygiene". If the answer was "yes", we asked information regarding (a) the exact name of the structure, (b) the kind of its organization, (c) whether the structure was formally linked to a University Medical School and (d) how its activities were interlinked with the patient safety activities. In the third part, the activities Prof. Pitzurra had identified as of strict hospital hygiene competence were listed (Table 1), and it was asked to indicate which of them were carried out, and if exclusively or in collaboration with other structures/ services (to be specified). If the answer was "no", it was asked which unit/department/ service carried out the activities listed. The fourth part included questions on the human resources, regarding, in particular, features and number of professionals involved. In the last part it was asked to identify strengths and critical issues of hospital hygiene in Italy.

Table 1- Activities in the strict competence of hospital hygiene, from Pitzurra (7)

1. Disinfection
2. Sterilization
3. Sterile material management
4. Clothing management
5. Antimicrobial prophylaxis
6. Personal hygiene materials (patients and healthcare workers)
7. Environmental cleaning and disinfection
8. Isolation control
9. Urban waste management
10. Special waste management
11. Infectious diseases notification
12. Healthcare workers immunization
13. Health education to staff
14. Epidemiological surveillance on patients
15. Microbiological monitoring of high and very high risk environments
16. Heating ventilation and air conditioning management
17. Food safety surveillance
18. Water microbiological surveillance
19. Staff risk prevention (chemical, physical and microclimate hazards)
20. Patients, caregivers and visitors risk prevention (chemical, physical and microclimate hazards)
21. Collaborating to hospital planning with reference to hygiene aspects
22. Co-ordination and management of the Hospital Infection Control Committee

Results

A total of 36 questionnaires were collected from 35 Trusts, including 55 hospitals with 26,960 hospital beds (an average of 847 beds

per hospital); 13 Trusts were located in the North, 8 in the Centre and 14 in the South and Islands.

In 20 questionnairs (55.6%) from 19 trusts, a structure bearing in its name the words "Hospital Hygiene" or "Hygiene" was present. There was a wide variety of names; 12/20 (60%) were called "Hospital Hygiene", 2/20 (10%) "Hygiene and Hospital Technique". Other denominations were "University Hygiene and Epidemiology", "Hygiene and Organization of Hospital Services", "Hygiene and Preventive Medicine", "Hygiene, Preventive and Occupational Medicine", "Medical and Management Unit for Hygiene and Risk prevention", "Preventive medicine", "Hospital Hygiene and Hygienic-Sanitary Safety". In 10/19 Trusts (52.6%) this structure was a Unit with full responsibility, in 4/19 (21.1%) a Unit with limited authonomy under medical direction responsibility, in 5/19 (26.3%) a Unit with no full responsibility; in one case the answer was "other" with no specification. A total of 11/19 (57.9%) Trusts of these Units were formally connected with the University.

Among the professionals involved full time in the structure, nursing staff was present with the highest percentage (33.3%), followed by medical doctors specialized in hygiene (24.6%), medical doctors not specialized in hygiene (11.6%), biologists (11.6%), administrative staff (6.5%),

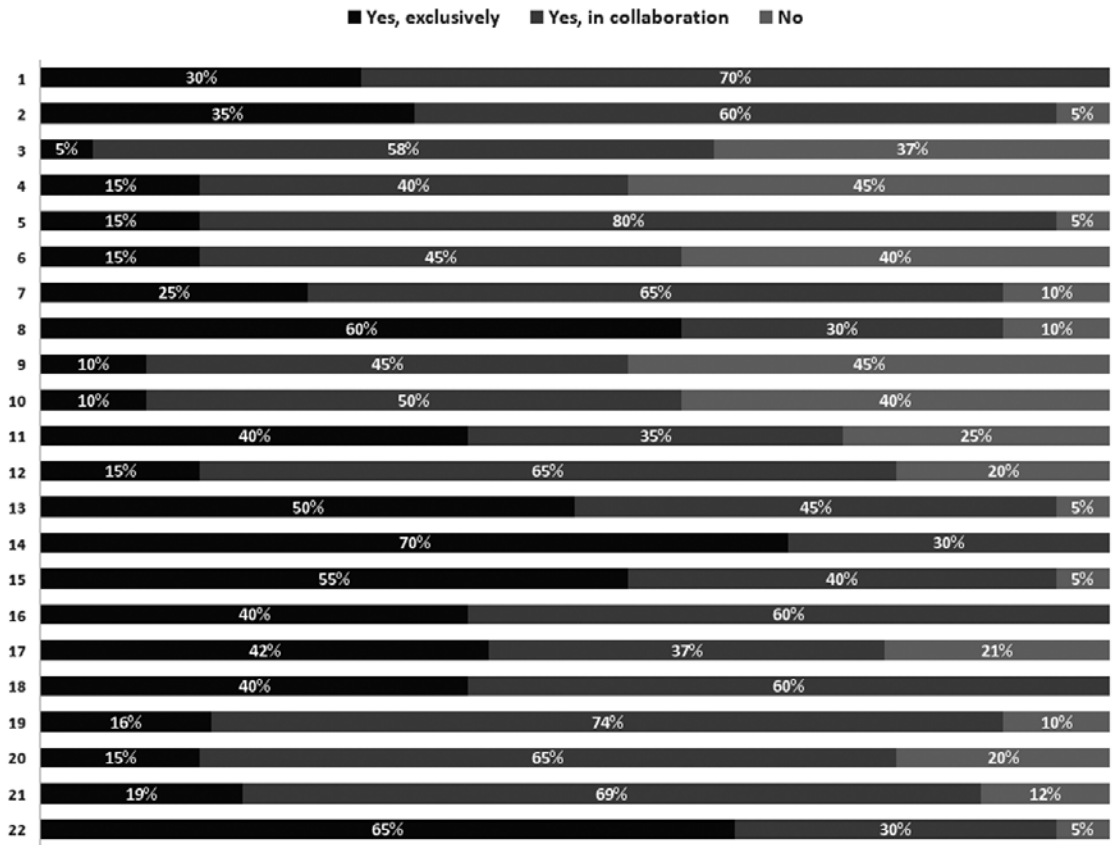

Figure 1 - Activities carried out by the hospital hygiene structure, exclusively, or in collaboration. The numbers 1-22 refer to the numbers reported in Table 1.

technicians (5.1%), prevention technicians (3.6%), health assistants (3.6%); medical doctors specialized or not specialized in hygiene and nursing staff were involved also in part time regimen, respectively in 40%, 10%, 20%.

Figure 1 shows the activities carried out by the "Hospital Hygiene" structure exclusively, or in collaboration. All the activities indicated by Prof. Pitzurra were among the tasks of the "Hospital hygiene". The activities carried out by all the 20 structures, exclusively, or in co-operation were: disinfection; epidemiological surveillance on patients; heating, ventilation and air conditioning management; water microbiological surveillance. The collaboration was most frequently with the Hospital Direction, but also other services were involved, such as Pharmacy, Occupational Medicine and Prevention and Protection Service, for staff risk prevention and education, Laundry, Supply and Logistic Unit, Technical office, Central Sterilization, Operating room block, Infectious Diseases Unit, Nursing service, Hospital Infection Control Committee. Environmental cleaning and disinfection, clothing management and urban waste management were the activities being outsourced in some hospitals.

In addition to the activities indicated by Prof. Pitzurra, 12/20 (60%) structures declared carrying out other activities, dealing with infection control (7), education and training (2), patient safety (3), or other activities, such as opinion on medical devices and biomedical equipment, outsourcing supervision (Table 2).

In all hospitals the activities of the HHS were inter-linked with those of patient safety, with different forms of collaboration, mainly through the Health Direction, sharing of projects, mutual membership, periodic reports.

In those hospitals where a structure referred to as Hospital hygiene was not present, the activities indicated by Prof. Pitzurra were carried out mainly by the Health Direction; frequently outsourced, in particular, were the activities for disinfection, sterilization, sterile

Table 2 - Activities to be carried out by the hospital hygiene structure, in addition to those indicated by Pitzurra (7)

Infection Control activities
Investigation of epidemics, environmental surveillance; epidemiological typing of microorganisms
Surveillance of antibiotic consumption and resistance of microorganisms
Microbiological monitoring of endoscopes
Microbiological monitoring of dialysis water systems
Microbiological control of the hands of HCWs
Sterility testing of blood components and galenic products
Validation of steam autoclaves
Vaccinations of outpatients, inpatients (e.g. splenectomized) and general population
Education and training activities
Health education for patient and visitors
Conduction of audit for HCWs
Behavioral control in the wards and in operating rooms
Coordination and monitoring of educational programmes for BSc in Nursing
Coordination of medical residents in Hygiene and Preventive Medicine
Patient safety
Coordination of the Patient Safety
Clinical audit
Safety walk round
Incident reporting and risk assessment
Other activities
Laundry management
Surveillance and monitoring of pressure sores
Surveillance of HCWs exposed to chemical risks; anesthetics and toxic substances environmental sampling
Outsourcing supervision
Opinion on medical devices and biomedical equipments
Participation in Hospital Committee for Good Practice in Trasfusion
Social assistance (only if Social workers are on the staff)

material management, clothing management, personal hygiene material, environmental cleaning and disinfection, urban waste management, special waste management, ventilation system management, food safety surveillance.

Among the critical issues regarding hospital hygiene in Italy, the most frequently mentioned were: lack of specific legislation; lack of human and economic resources; overlapping of roles, particularly in the area of patient safety; lack of hospital networks in this field; non-recognition by top management or/and clinical staff; non-recognition by the HCWs, due to lack of prevention culture; low impact on the organizational and managerial aspects; specific contents of Hospital Hygiene delegated to other professionals, without supervision; lack of specific training in undergraduate and postgraduate courses. Identified strengths were: skills related to the prevention of biological, chemical and physical risks; prevention and control of HAIs; capacity to unify the different elements of the activities dealing with the wellbeing of those who attend the hospital; skills to carry out the transfer of multidisciplinary knowledge in decision-making processes for health promotion and prevention; capacity to organize and plan the Evidence Based Prevention with a coordinated and inter-professional approach; ability to use tools of the governance in health facilities; specific education and training on the multidisciplinary and multi-professional approach.

Conclusions

In Italy there is no legislation concerning the establishment of a Hospital Hygiene structure in hospitals, and the hospital organization plans vary widely. The survey carried out, even though on a limited sample, has provided a picture of hospital hygiene at a national level. There is evidence of a wide difference in hospital organization regarding the Hospital Hygiene activities at national and regional level. Although there is a wide recognition of the importance of this area, specific rules are missing in this field, and human and economic dedicated resources are lacking; moreover, an overlap in the roles and responsibilities, in particular in the area of patient safety, is evident.

Hospital Hygiene in Italy has a long tradition, and this survey shows that it remains a pillar in order to ensure quality and safety of care. However, to this end, the challenges which are clearly reported by Brusaferro et al. (8) must be addressed, starting from the need to change the term “hospital hygiene” to “healthcare organization hygiene” in order to include all settings where care is provided. It is essential to share organizational and managerial models at a national and European level, and pay great attention to the education and training of professionals, as proposed by the GISIO and shared with EUNETIPS (European network to promote infection prevention for patient safety) (9,10), also through new learning approaches (11, 12).

Acknowledgements

The Authors wish to thank all the participating hospitals for providing data:

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Azienda Ospedaliero Universitaria Policlinico di Bari
Ospedale Generale Regionale “F. Miulli”, Bari
Azienda Sanitaria ASM, Matera
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Azienda Ospedaliero-Universitaria di Sassari
Azienda Ospedaliera Universitaria Integrata di Verona
Azienda Unità Sanitaria Locale Piacenza, Piacenza
Fondazione Policlinico Universitario A. Gemelli IRCCS, Roma
Azienda Socio Sanitaria di Cremona, Cremona
Azienda Ospedaliero-Universitaria Ospedali Riuniti, Ancona
Azienda Fondazione IRCCS Ca' Granda, Milano
Azienda Sanitaria Regionale Molise
Azienda Ospedaliero-Universitaria di Parma
Azienda Ospedaliera di Padova
Azienda Sanitaria dell'Alto Adige (Presidio Ospedaliero di Bolzano, Presidio Ospedaliero di Merano)
Azienda Ospedaliero-Universitaria "Mater Domini", Catanzaro
Azienda Ospedaliera di Cosenza
Azienda di Sanità Pubblica di Catanzaro (Presidio Ospedaliero Lamezia Terme)
Azienda Sanitaria Locale 1, L'Aquila (Presidio Ospedaliero San Salvatore)
Azienda Provinciale per i Servizi sanitari, Rovereto, TN (Presidio Ospedaliero di Rovereto)
Azienda Ospedaliero-Universitaria Città della Salute e della Scienza di Torino (Presidio Ospedaliero Le Molinette)
Azienda Sanitaria Provinciale di Vibo Valentia, Vibo Valentia (Presidio Ospedaliero "G. Jazzolino")

Riassunto

L'igiene ospedaliera in Italia: l'indagine del GISIO-SItI

Introduzione. In Italia non vi sono norme relative all'istituzione di una struttura di Igiene ospedaliera nelle Aziende sanitarie e gli organigrammi aziendali presentano un'ampia variabilità. Obiettivo dello studio è stato quello di valutare la presenza di strutture, professionisti e compiti dedicati.

Metodi. È stato utilizzato un questionario semistrutturato somministrato ad Aziende sanitarie rappresentative di tutte le regioni italiane tramite i componenti del GISIO.

Risultati. Hanno compilato il questionario 35 Aziende, 13 al Nord, 8 al Centro, 14 al Sud e Isole. In 19 Aziende (54,3%) è prevista nell'atto aziendale una struttura semplice o complessa che include nella sua denominazione i termini "igiene" o "igiene ospedaliera". Le attività relative alla gestione del rischio infettivo sono quelle maggiormente rappresentate, svolte in modo autonomo o in collaborazione, ma ambiti di azione riguardano anche il rischio chimico e il rischio fisico. In tutte le Aziende le attività dell'Unità di Igiene ospedaliera si relazionano con quelle del rischio clinico aziendale, con diverse forme di collaborazione.

Conclusioni. L'indagine condotta, seppur su un campione limitato, ha fornito un quadro dell'igiene ospedaliera a livello nazionale, evidenziando una notevole eterogeneità e facendo emergere criticità e punti di forza. È fondamentale condividere modelli organizzativi e gestionali che valorizzino e promuovano l'igiene ospedaliera, per garantire l'appropriatezza delle pratiche assistenziali in un ambiente sicuro e confortevole per pazienti, operatori e visitatori.

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